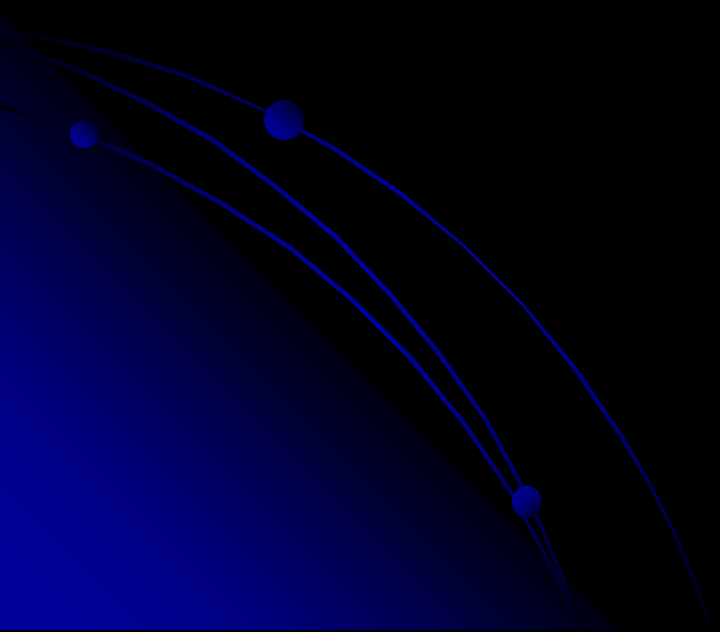


# The Anatomy of Erectile Apparatus

**BY**

*Dr. Abdel Shakour A. Al Mohamady*  
*Prof. of Dermatology, Venereology And*  
*Andrology*  
*Faculty of Medicine*  
*Al-Azhar University*

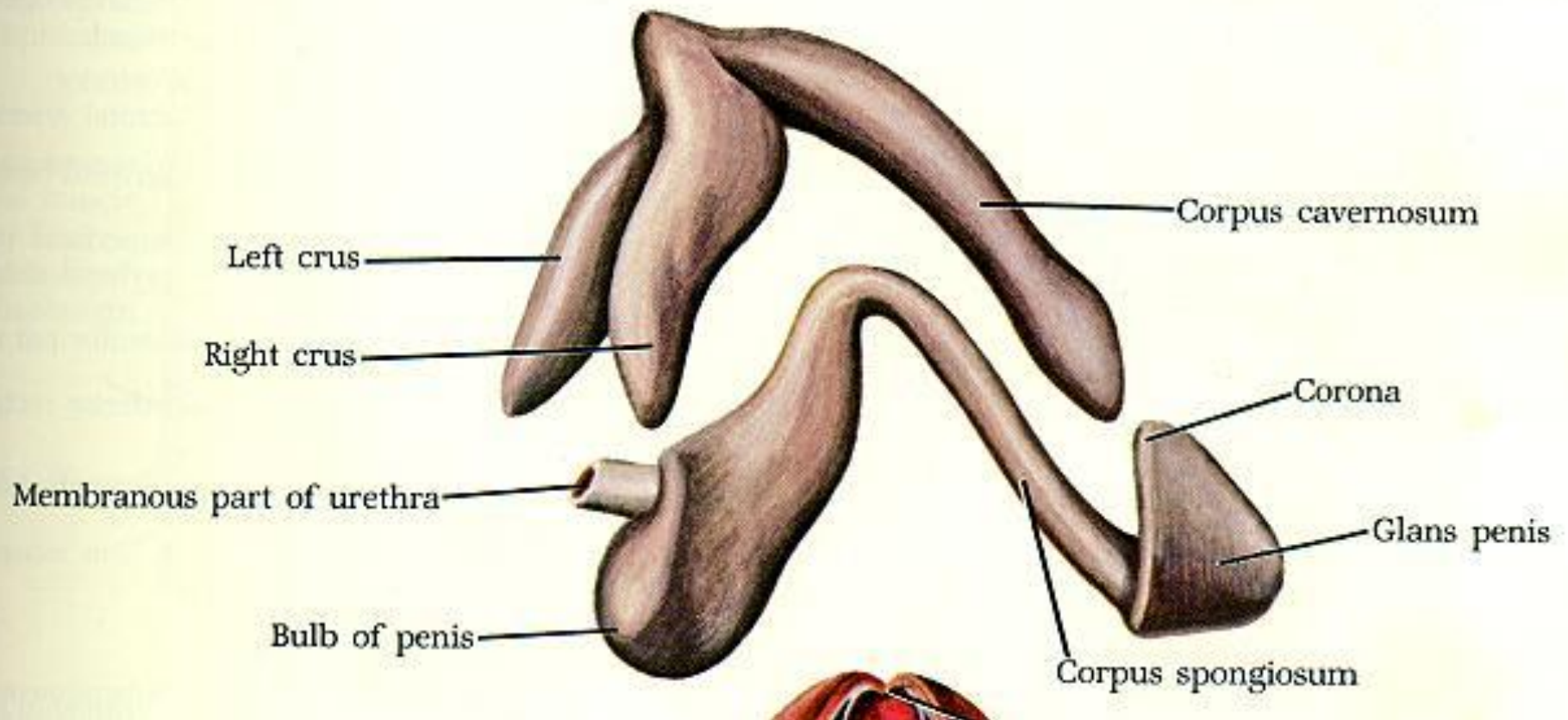
The penis as we know is the male copulative organ, for it to become “erect” blood has to collect inside the penis ..



- This is done inside the

## “Erectile Apparatus”

- This *erectile apparatus* consists of:
  - a) Paired corpora cavernosa.
  - b) One corpus spongiosum.



*Dorsal veins*      *Dorsal artery and nerve*

*Integument*

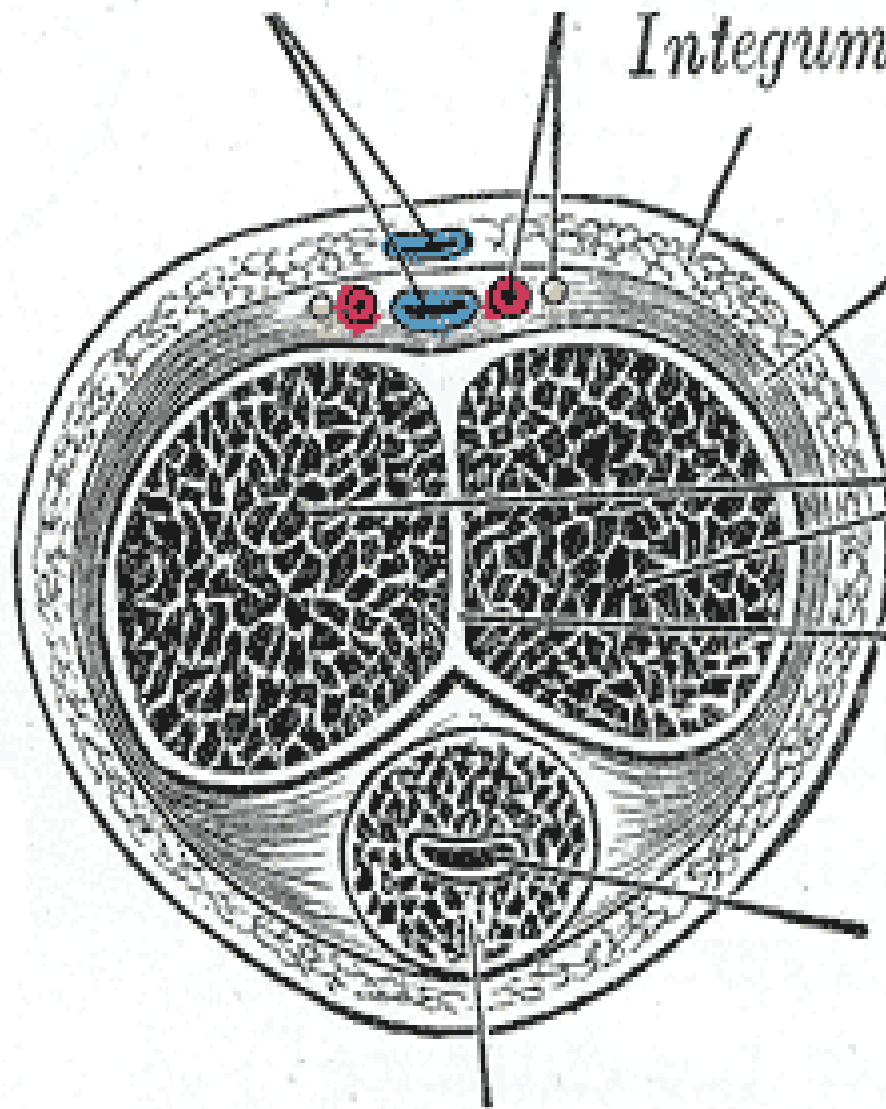
*Fibrous envelope*

*Corpora cavernosa penis*

*Septum pectiniforme*

*Urethra*

*Corpus cavernosum urethræ*

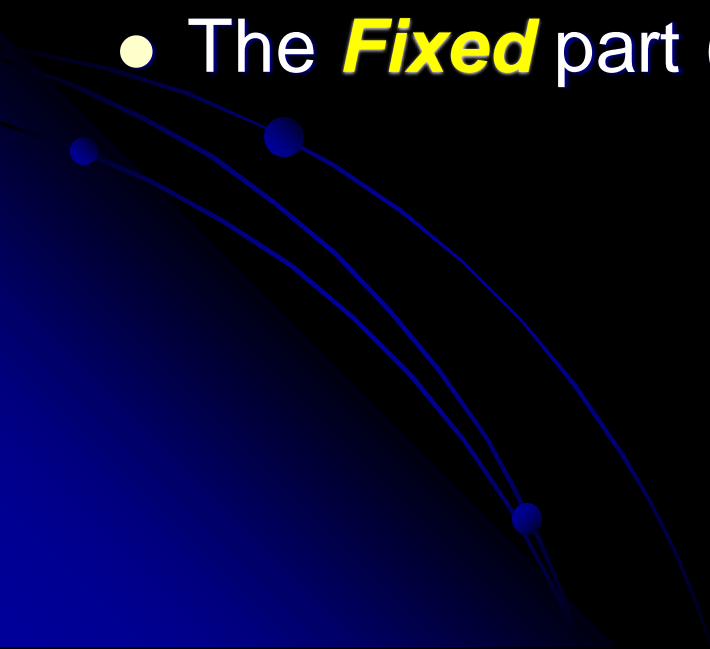


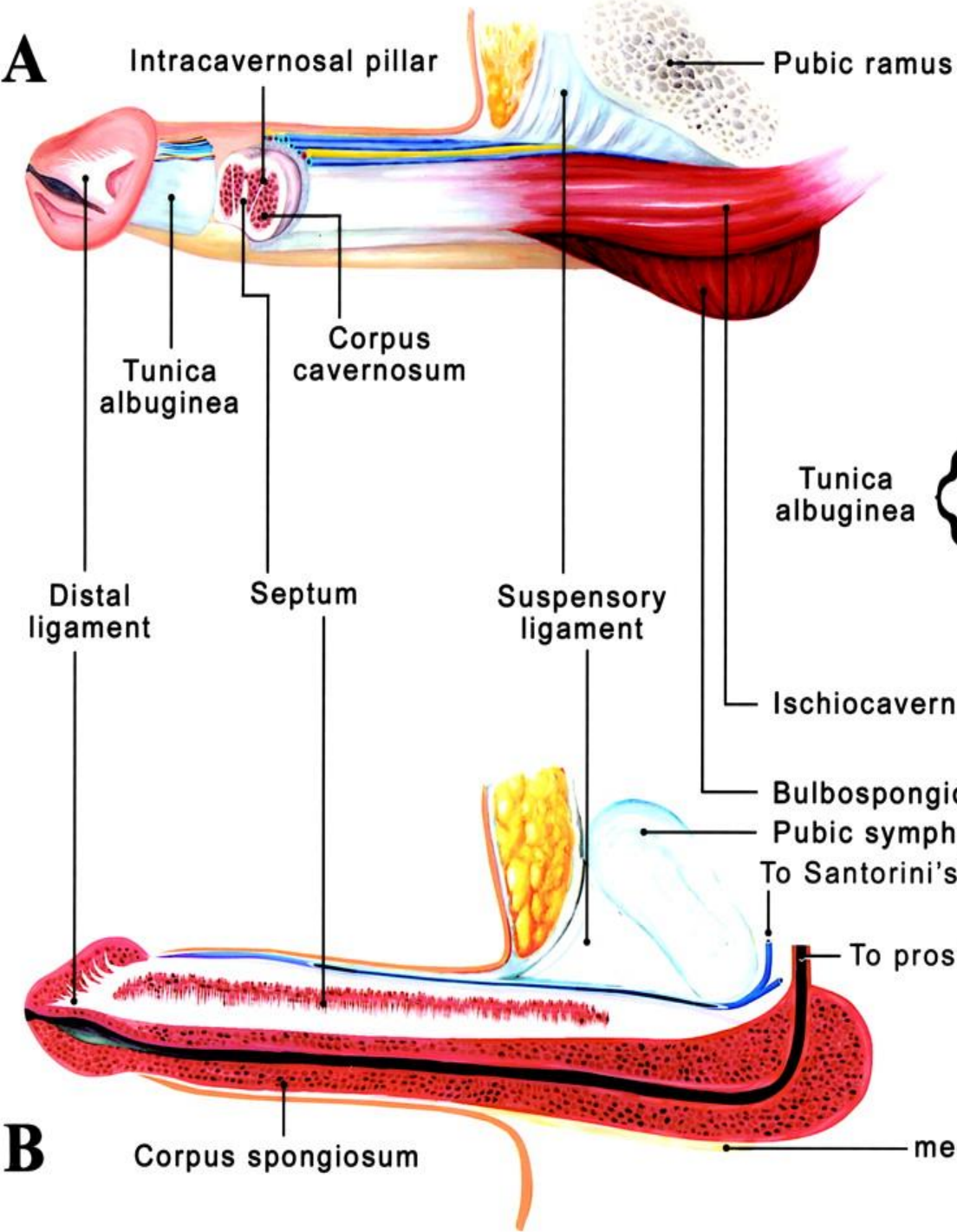
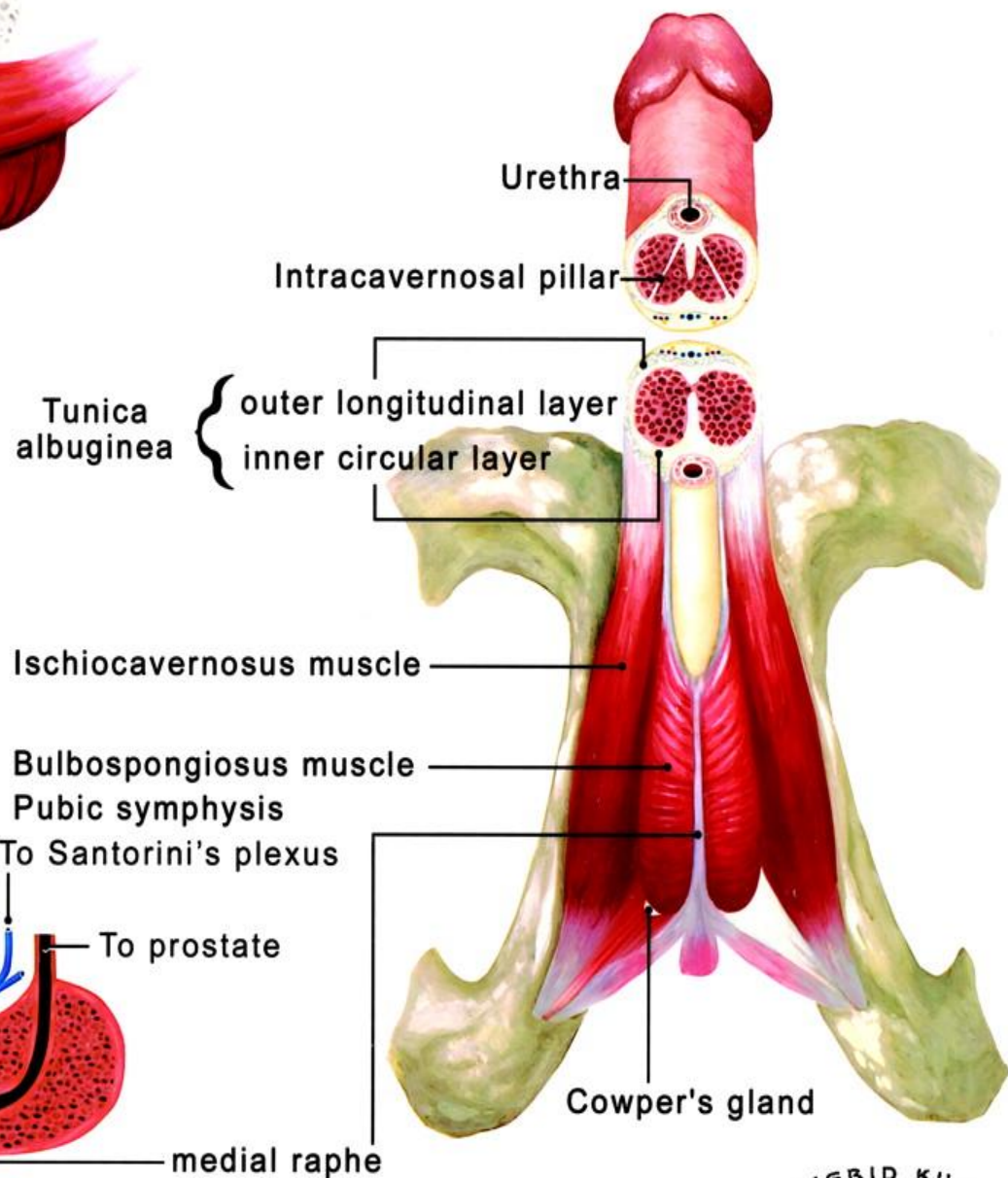
# The penis itself is made up of two main parts:

- The **Pendulous** part (Shaft of the penis).

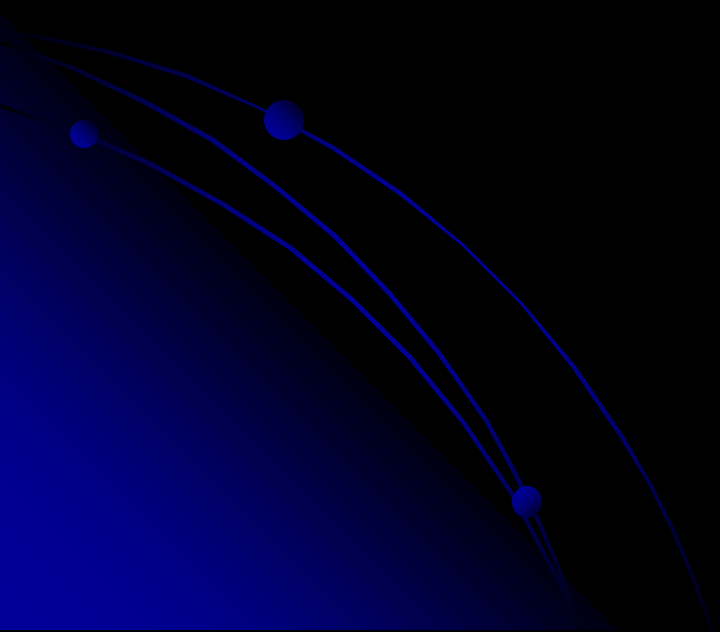
This part is 4-6 inches (10.2-15.5 cm)

- The **Fixed** part (Root of the penis).

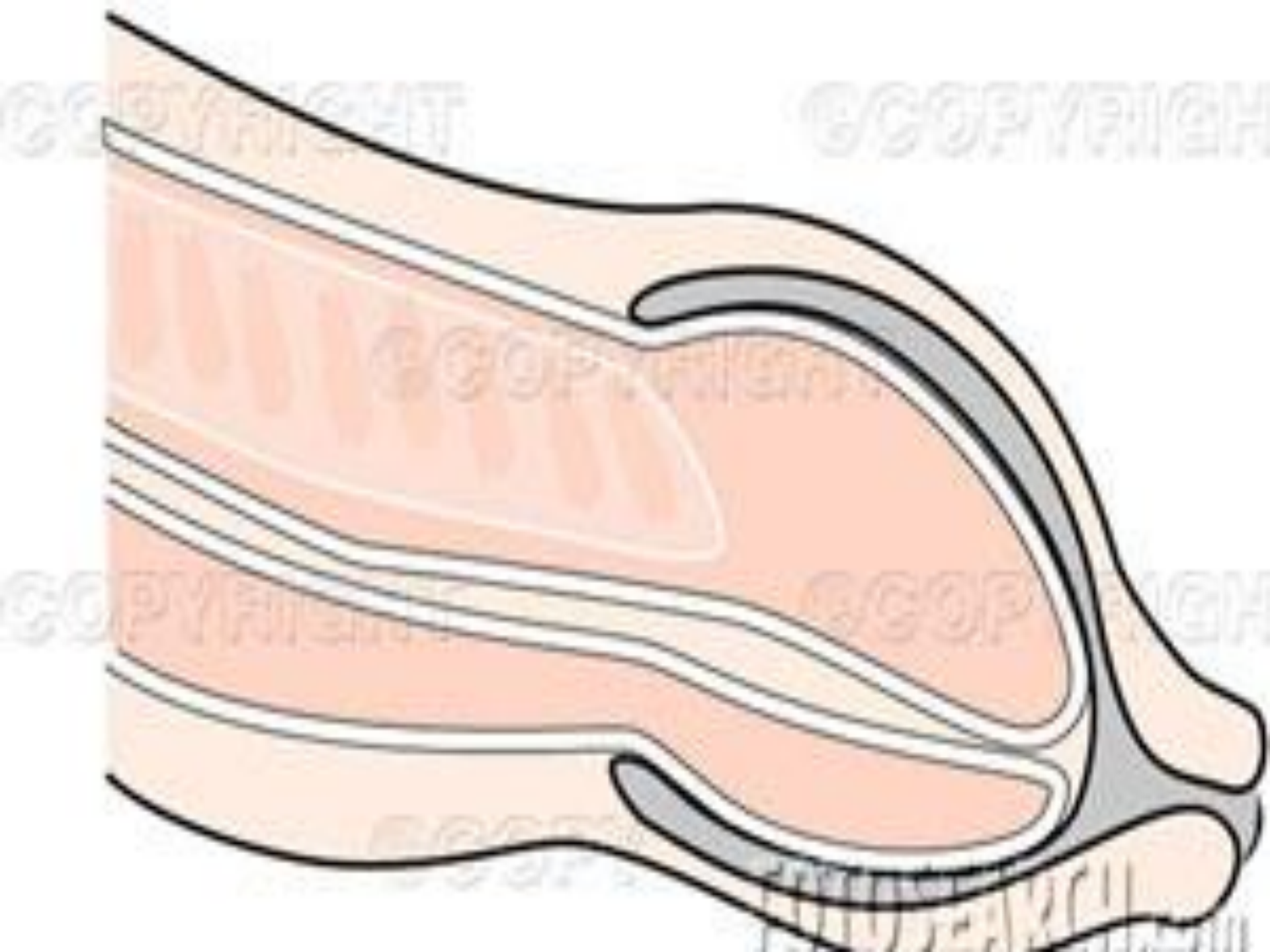


**A****C**

# The Penile Skin



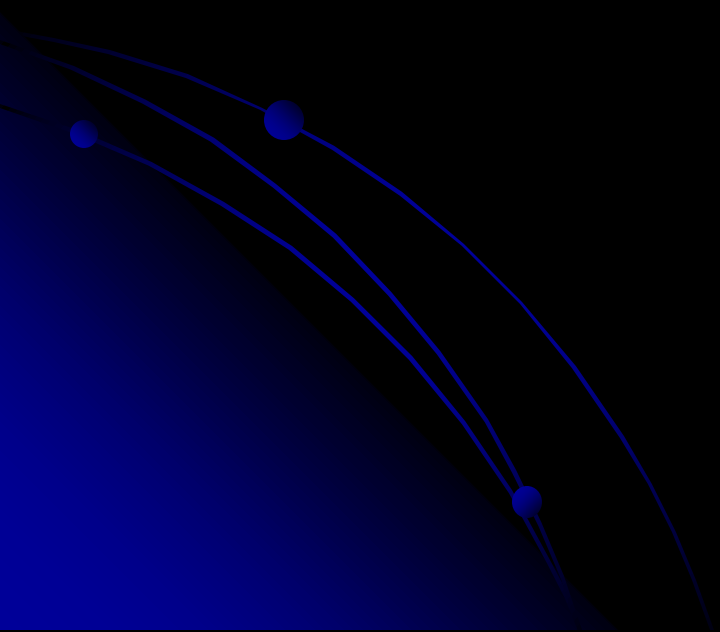


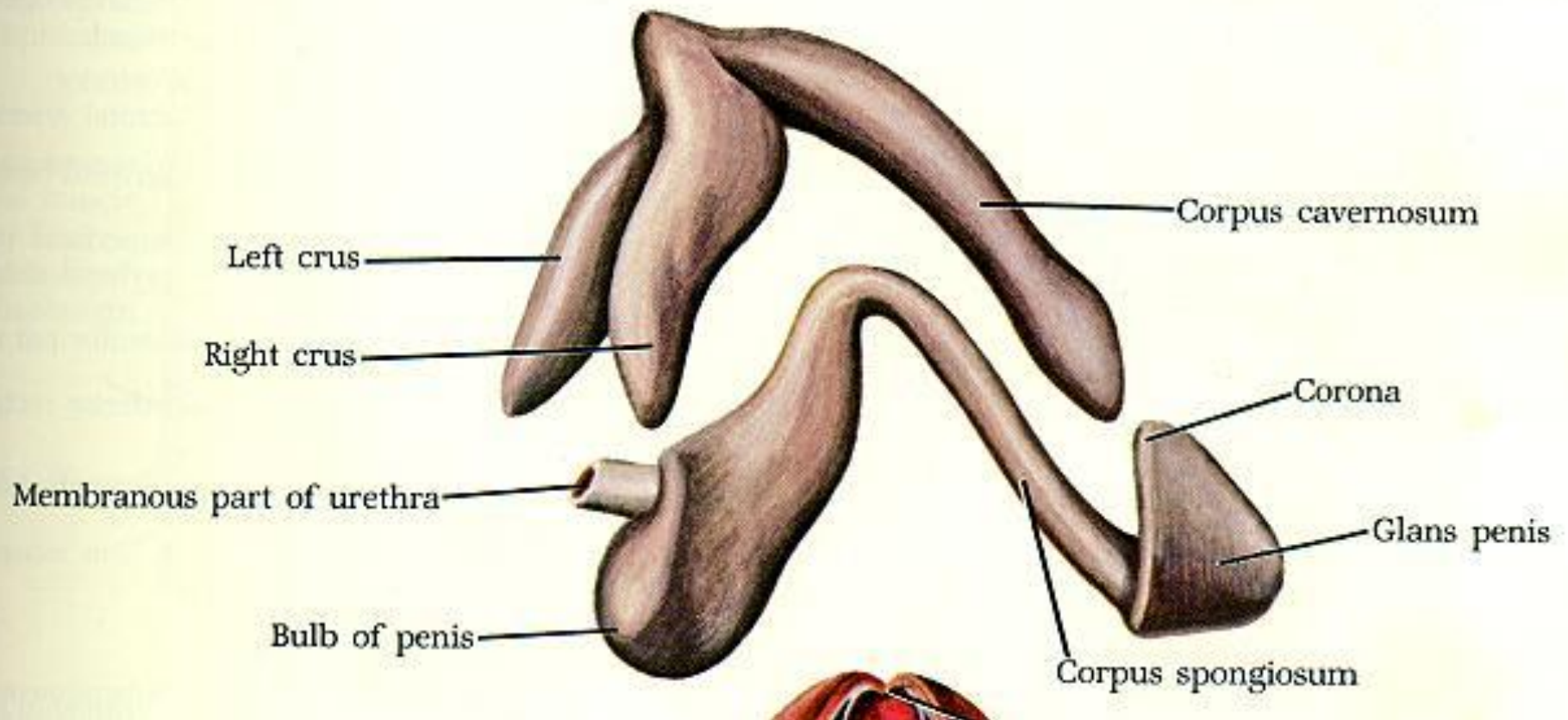


The penile skin envelopes the shaft and can be moved freely during erection.

It is continuous with of the lower abdominal wall and continuous over the *glans penis* forming the prepuce, which then folds on itself reattaching at the coronal sulcus.

# Colle's fascia and Buck's fascia





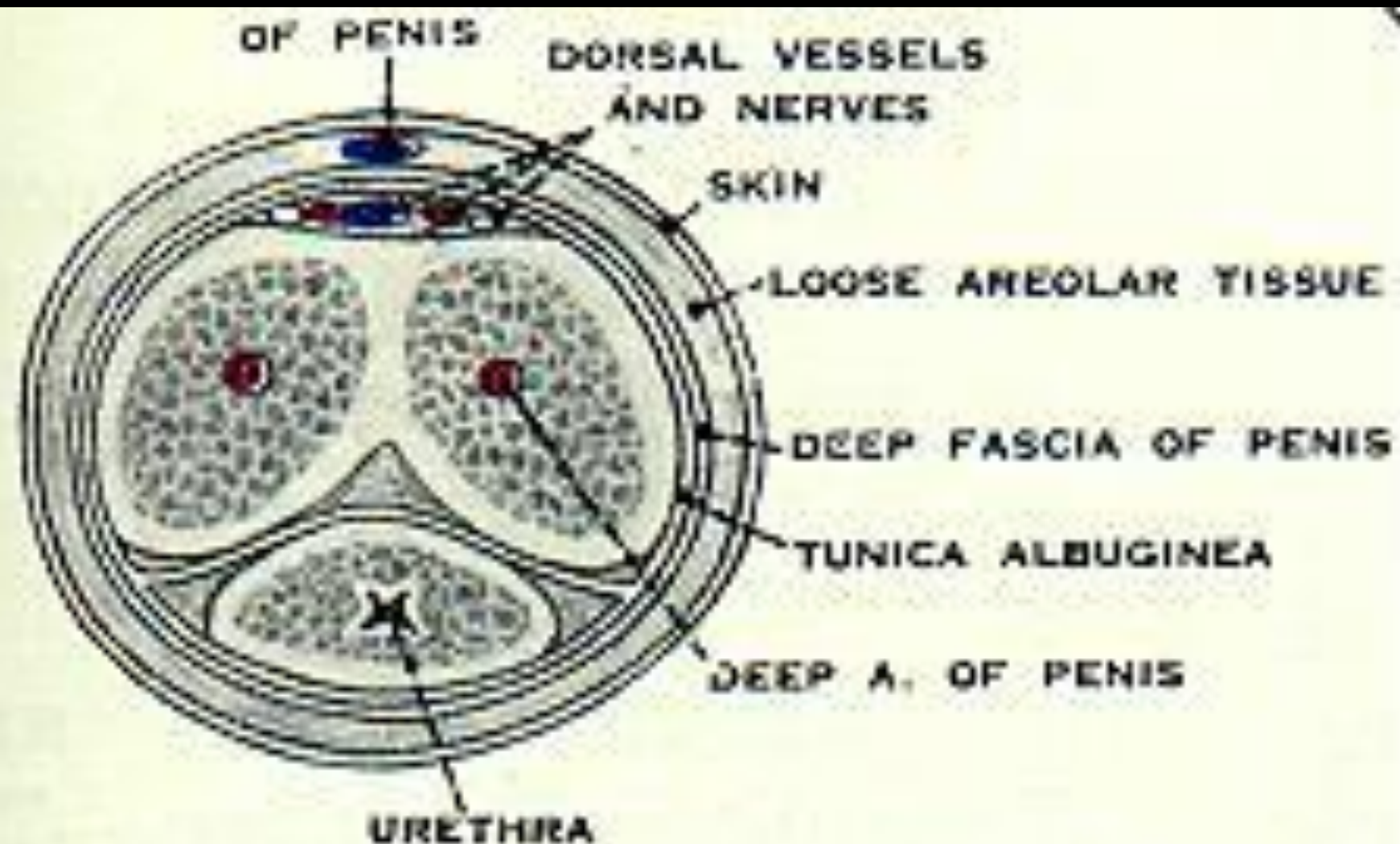


FIG. 521. Schemes to show the s

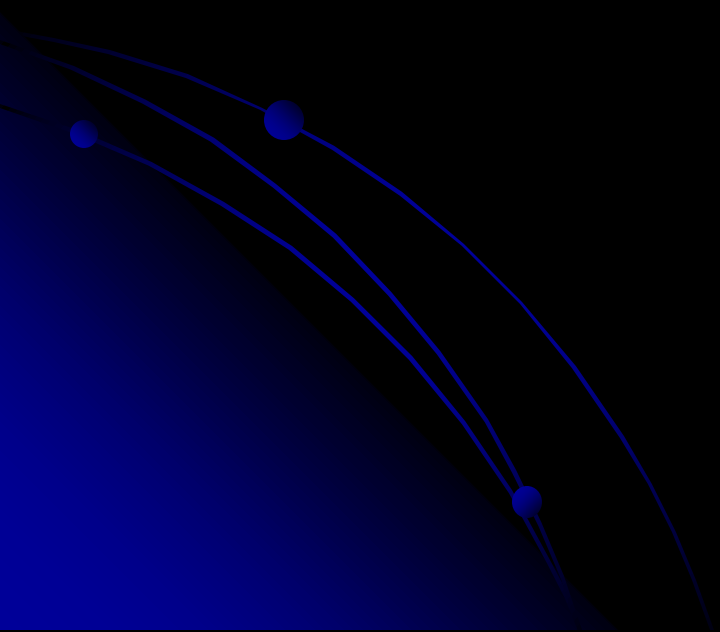


- **Colle's fascia** (also known as the “Dartos fascia” or the “Superficial layer of the penis”)

Is a ***continuation*** of **Scarpa's fascia** of the lower abdominal wall.

- Inferiorly continuous with:  
**Dartos fascia** of the scrotum and  
**Colle's fascia** of the perineum.
- Attached to:  
The posterior border of the *Perineal membrane*.

- The **Superficial Dorsal Vein** is seen in this layer of the fascia.





- **Buck's fascia** (deep layer of the penile fascia)

**Covers** both corpora cavernosa and corpus spongiosus proximally.

- **Buck's fascia**

is attached proximally to *Perineal membrane* and distally to the *base of the glans penis at the coronal sulcus*.

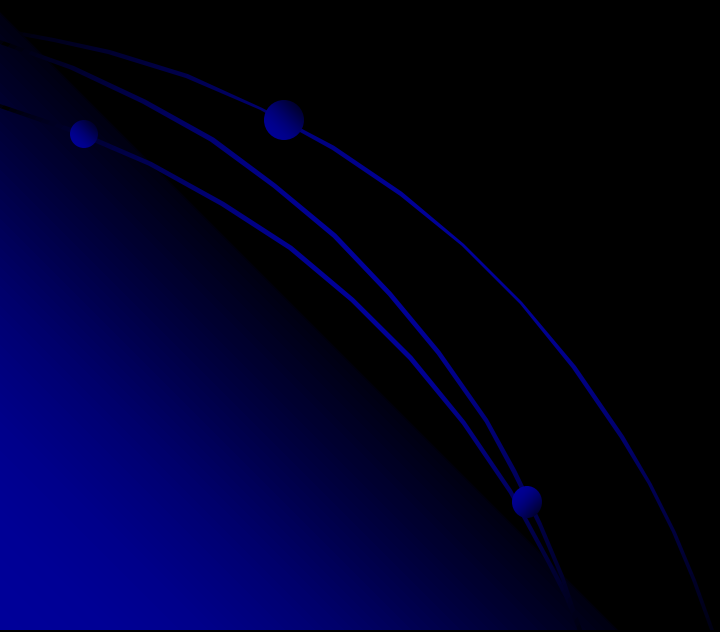
- Encloses the *deep dorsal vein, artery and nerves (VAN)*.
- 

# Tunica albuginea

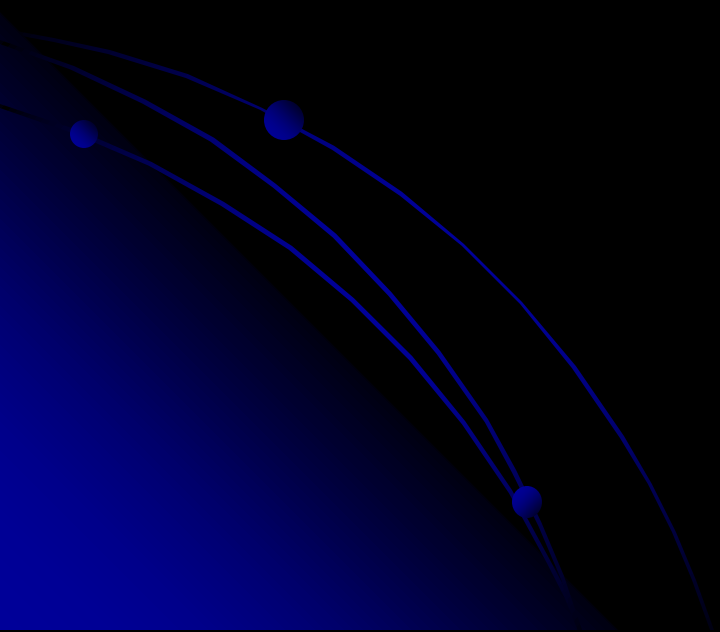
- Covers the corpora cavernosa and corpus spongiosum.
- Offers greater flexibility, rigidity and tissue stretching to the penis.

**p.s. the tunica albuginea of the corpus spongiosum is thinner than that of the corpora and contain muscles that aid ejaculation.**

# Ligaments



- **Fundiform ligament:**  
is a thickening of the superficial penile  
fascia (*Colle's fascia*).

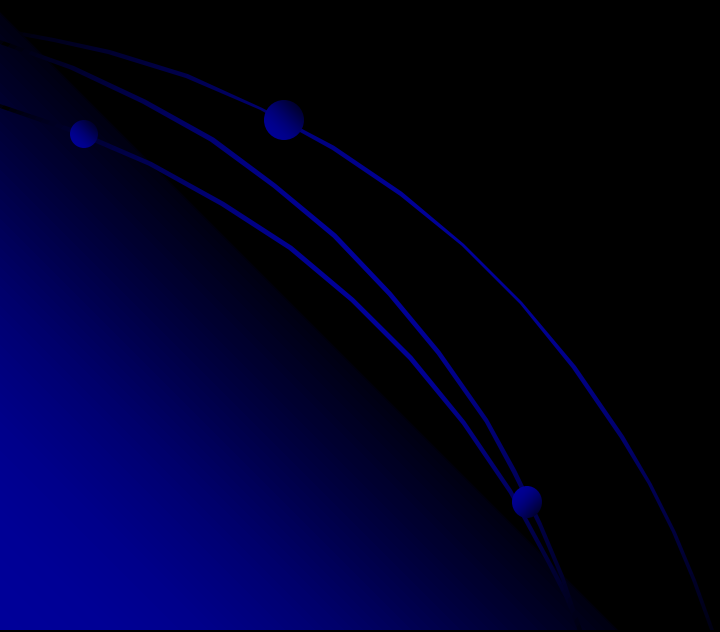


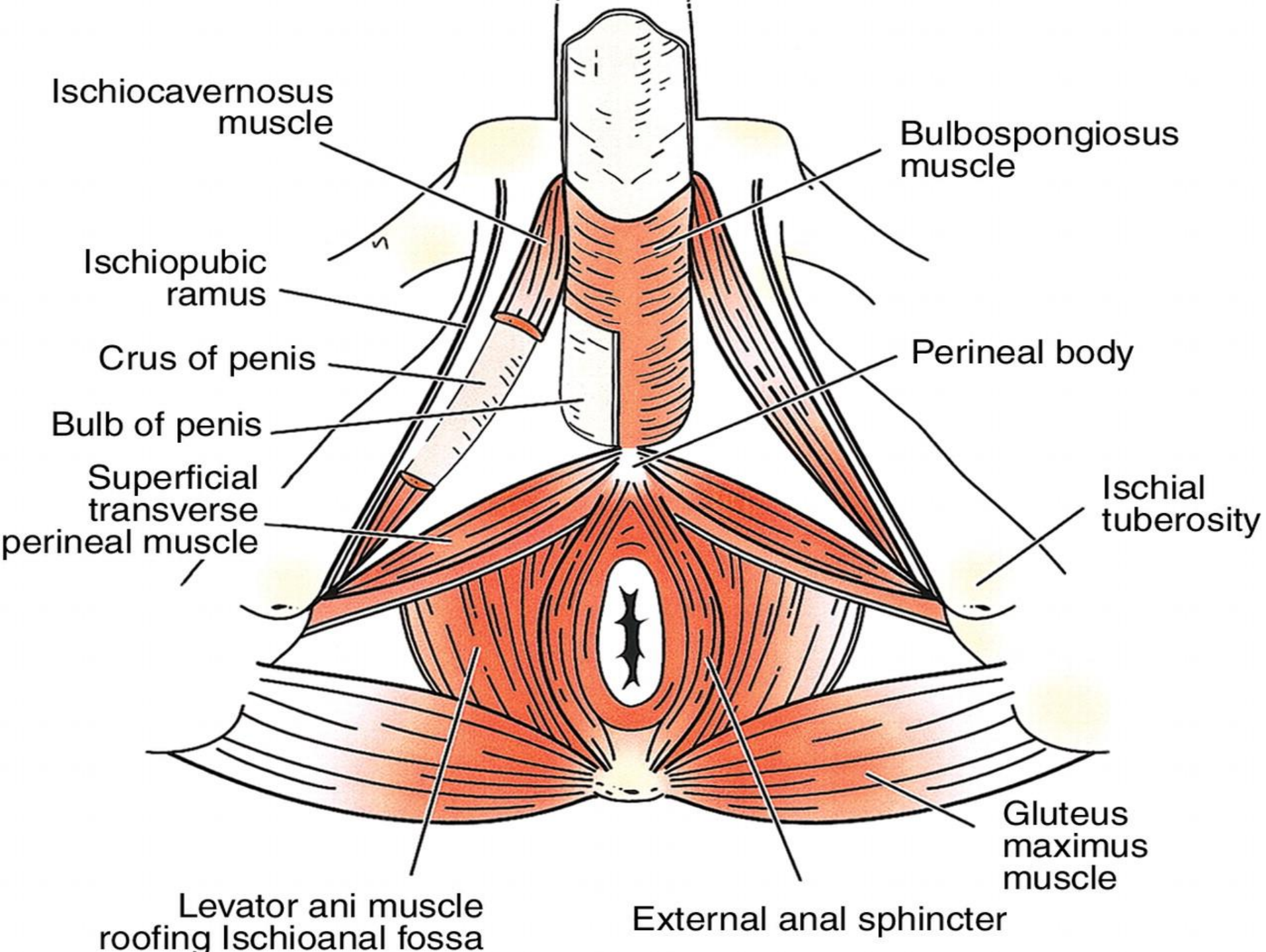
- **Suspensory ligament:**

Continuation of Buck's fascia,

The attachment of the ligament to the symphysis pubis maintains the penile position during erection.

# Muscles







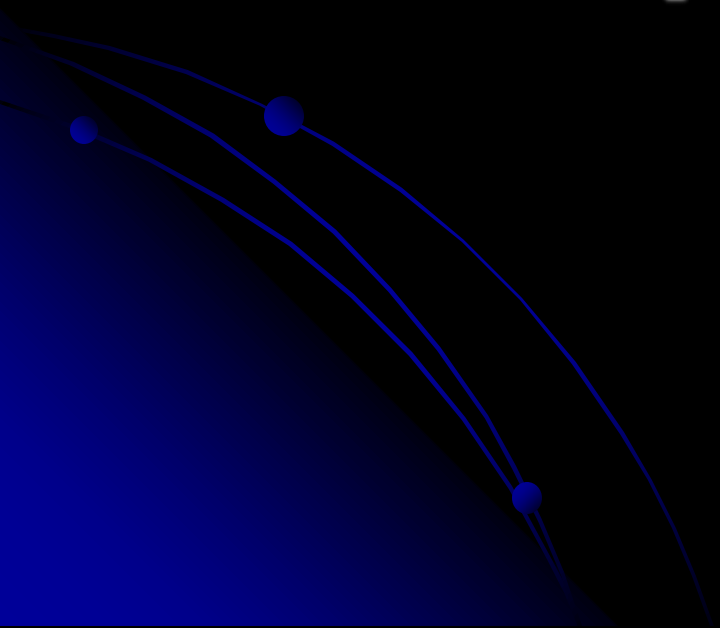
# Ischiocavernosus muscle

- Originates from the ischeal tuberosity.
- Inserts into the medial and inferior surface of the corpora cavernosa.
- Supplied by the Perineal branch of the pudendal nerve.
- Function Increases penile rigidity during erection.

# Bulbospongiosus muscle

- Originates from the **central tendon** of the **perineum** (Perineal body).
- Inserts by running obliquely upwards and laterally on each side of the bulb and into the midline dorsally.
- Supplied by the **Perineal nerve**.
- Function Empty the last drops of urine or semen.

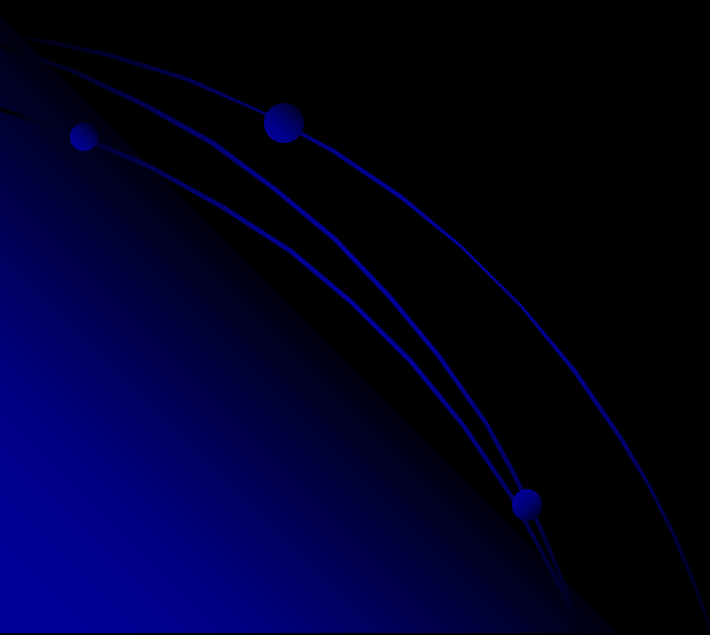
# **Arteries ,Veins and intercorporal circulation**

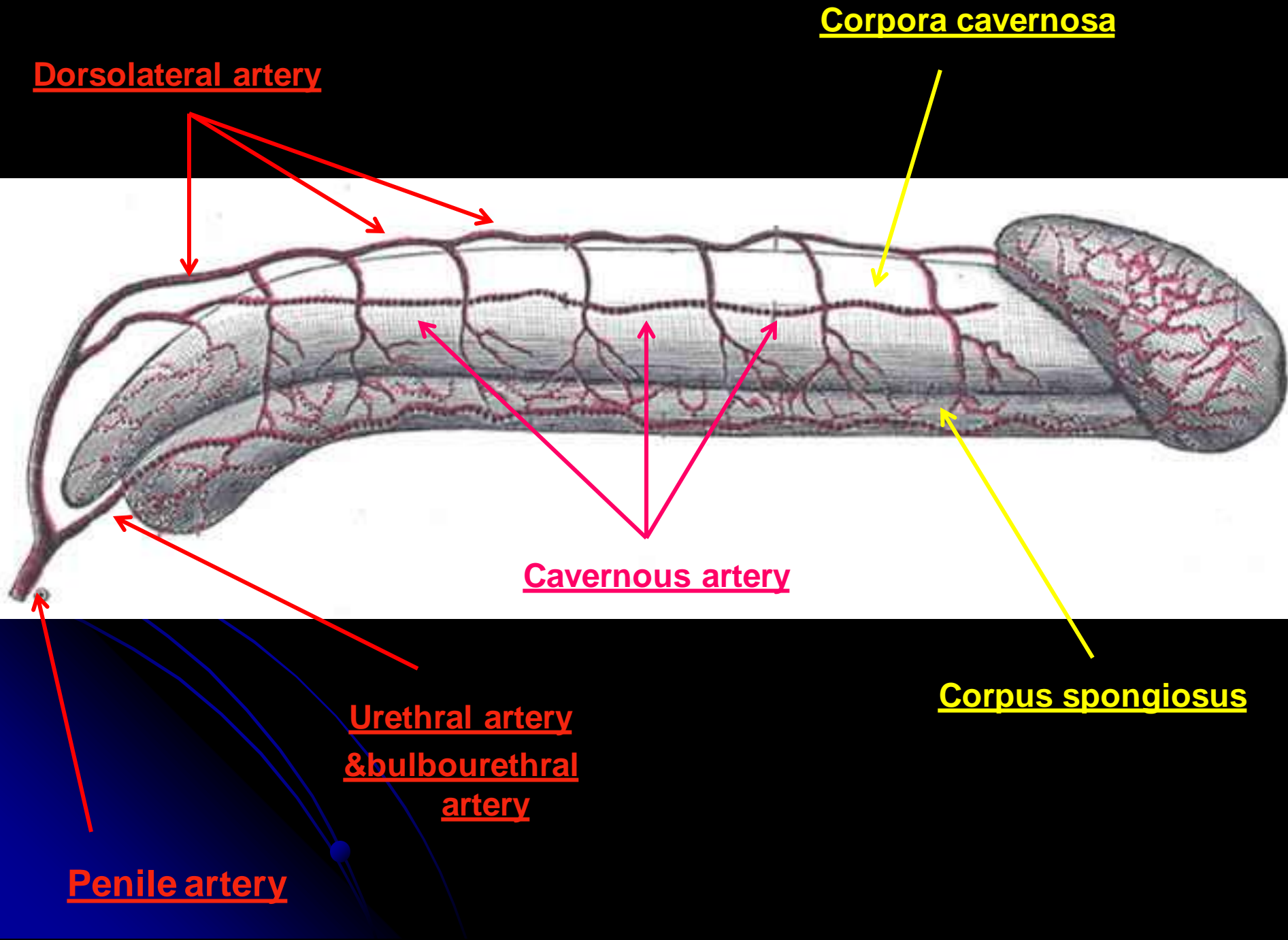


# Arterial system

- Superficial system

- Deep system





# Superficial arterial system

- The Inferior external pudendal artery (a branch of Femoral artery) divides giving



```
graph TD; A[The Inferior external pudendal artery (a branch of Femoral artery) divides giving] --> B[Dorsolateral artery]; A --> C[Ventrolateral artery];
```

Dorsolateral artery

Ventrolateral artery

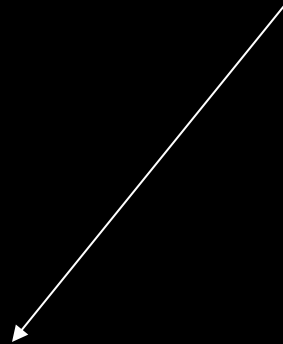
- Supply the **skin of the shaft** and the **prepuce** up until the coronal sulcus where...

**The Superficial System**  
**communicates with**  
**The deep arterial system.**

# The Deep arterial system

**Internal Pudendal Artery** *(a branch of Internal iliac artery)*

divides giving two branches:



• Perineal Artery

• Penile Artery.



# Penile arterial supply

## Mainly:

Internal iliac artery



Int. pudendal a.



branch to perinium

common penile a.

## Sometimes:

Accessory arteries arising from: ext. iliac, obturator, vesical and femoral arteries.

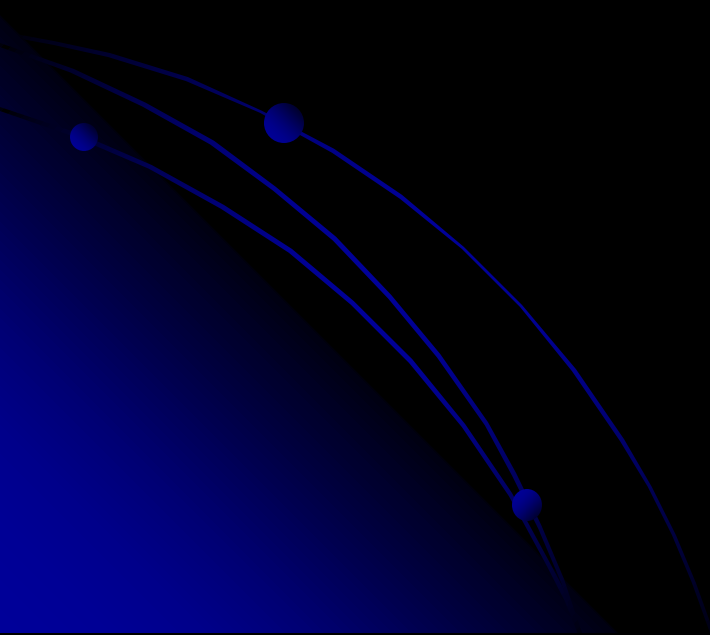
Their damage during R.prostatectomy or cystectomy    vasculogenic E.D.

# *Penile artery*

Cavernous artery  
(deep penile)

Dorsal artery of the  
penis

Urethral artery  
(& bulbourethral)



# The intercorporal circulation

- *Cavernous artery*  
divides giving:
  1. *Helicine artery.*
  2. *Sinusoidal artery.*
- Blood then enters  
the *Lacunar space.*

**FLACCID**

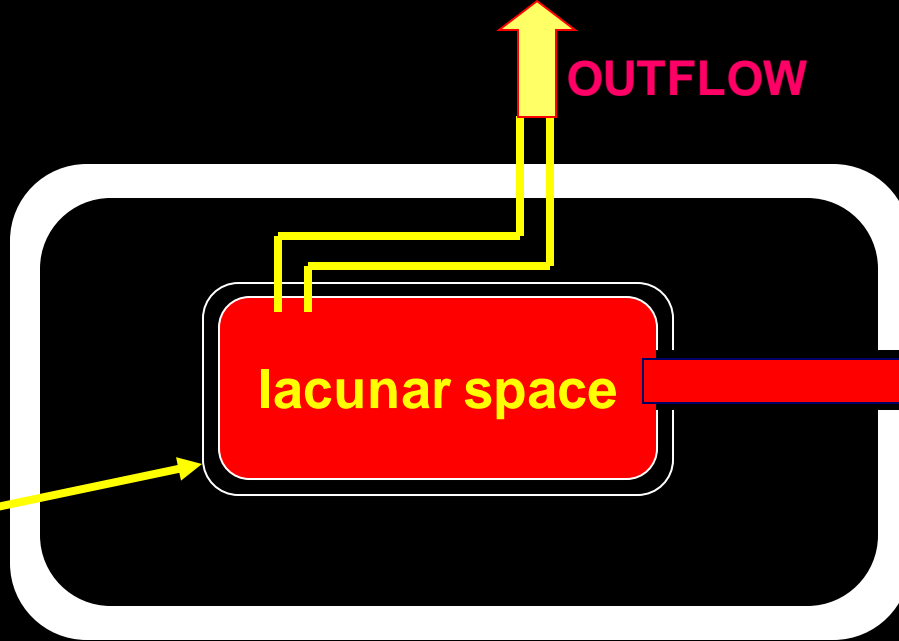
**Tunica  
albuginea**

**Cavernosal  
smooth  
muscle**

**lacunar space**

**OUTFLOW**

**INFLOW**

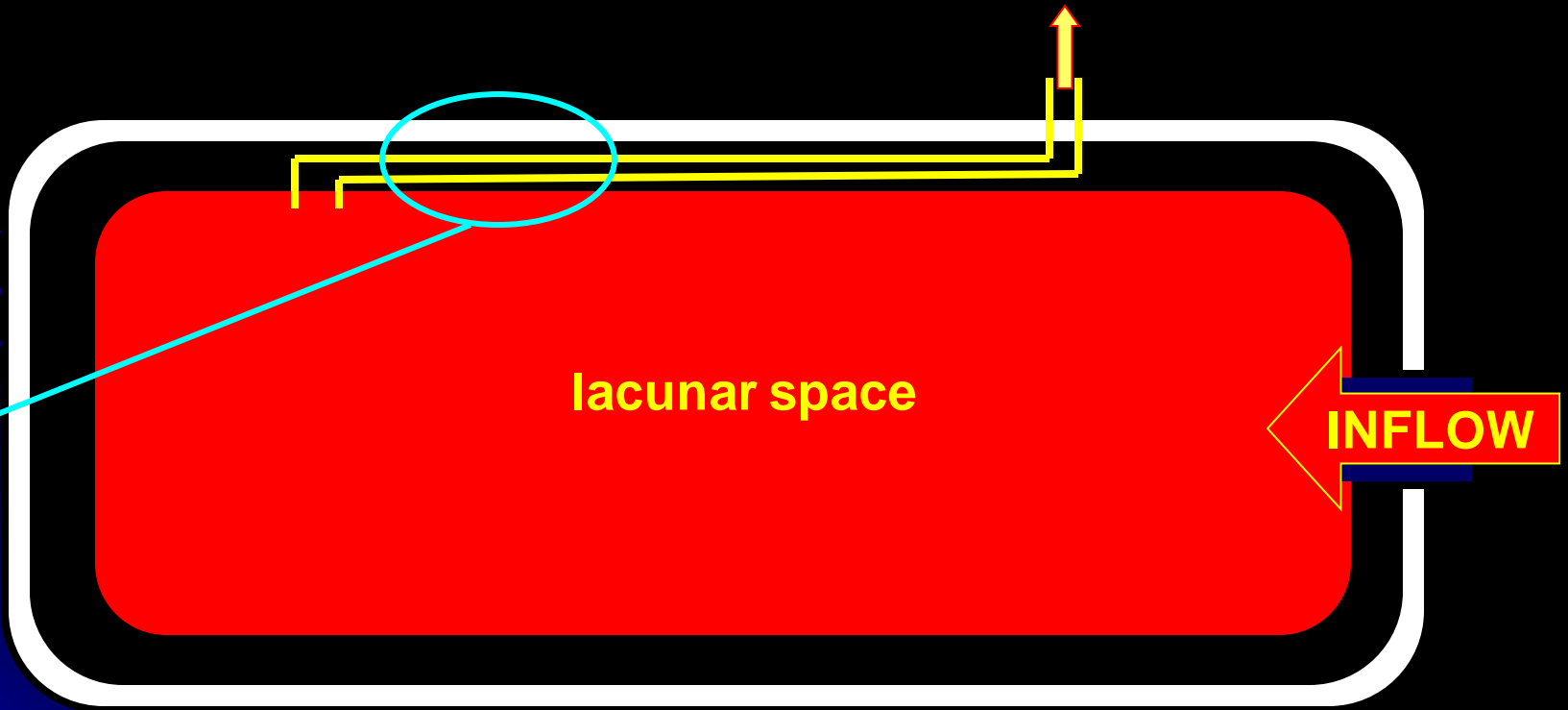


**ERECT**

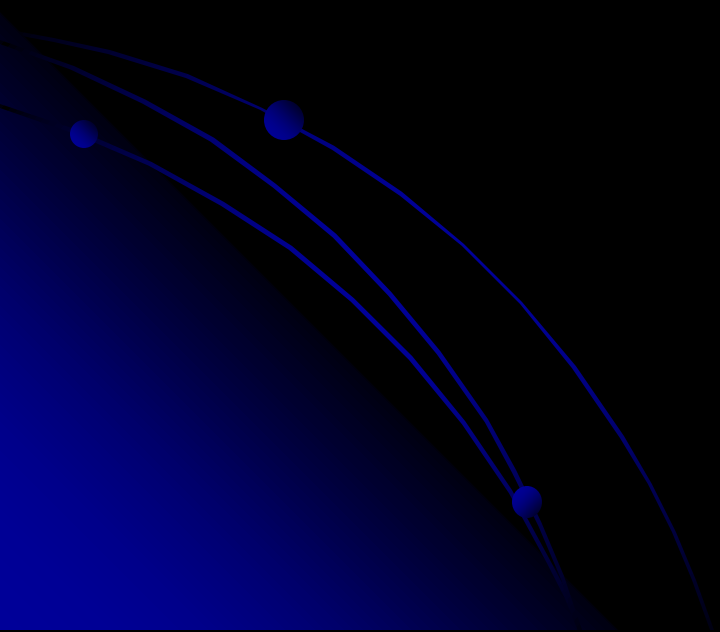
**Subtunica  
Venus  
Plexus  
elongation**

**lacunar space**

**INFLOW**



- Then drained as follows.....



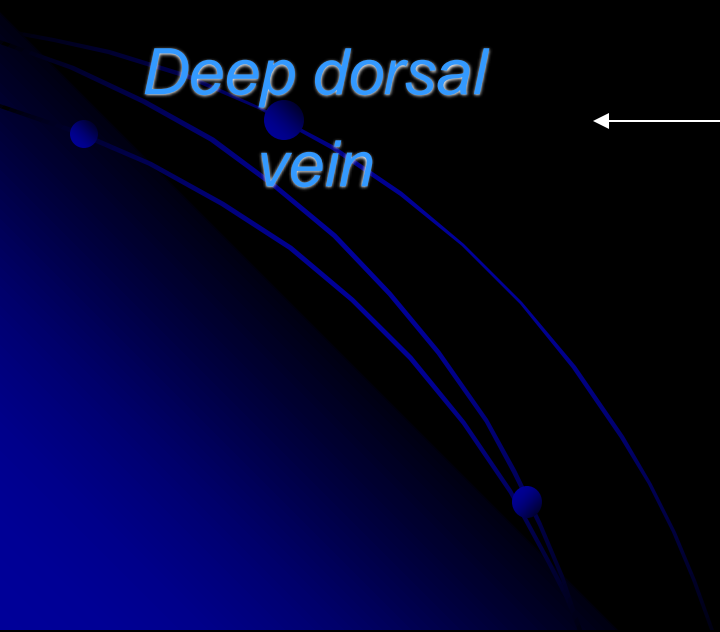
## ***Post cavernous venules***

***Subalbugineal  
venous plexus***

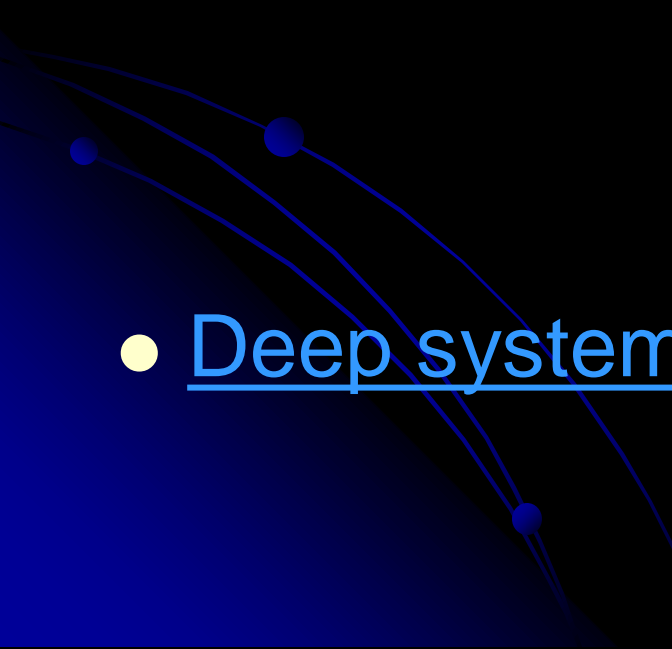
***Emissary  
veins***

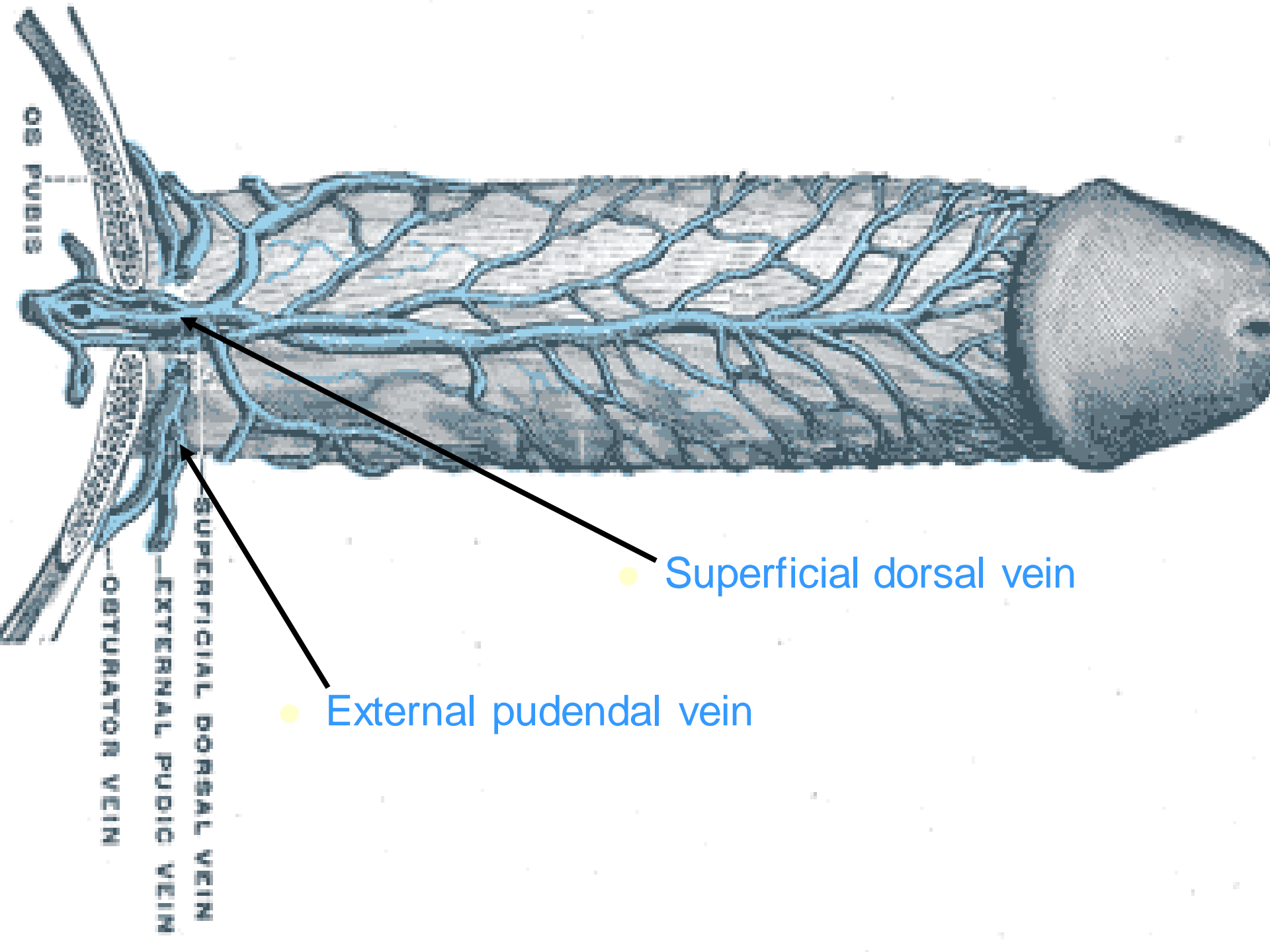
***Circumflex  
vein***

***Deep dorsal  
vein***

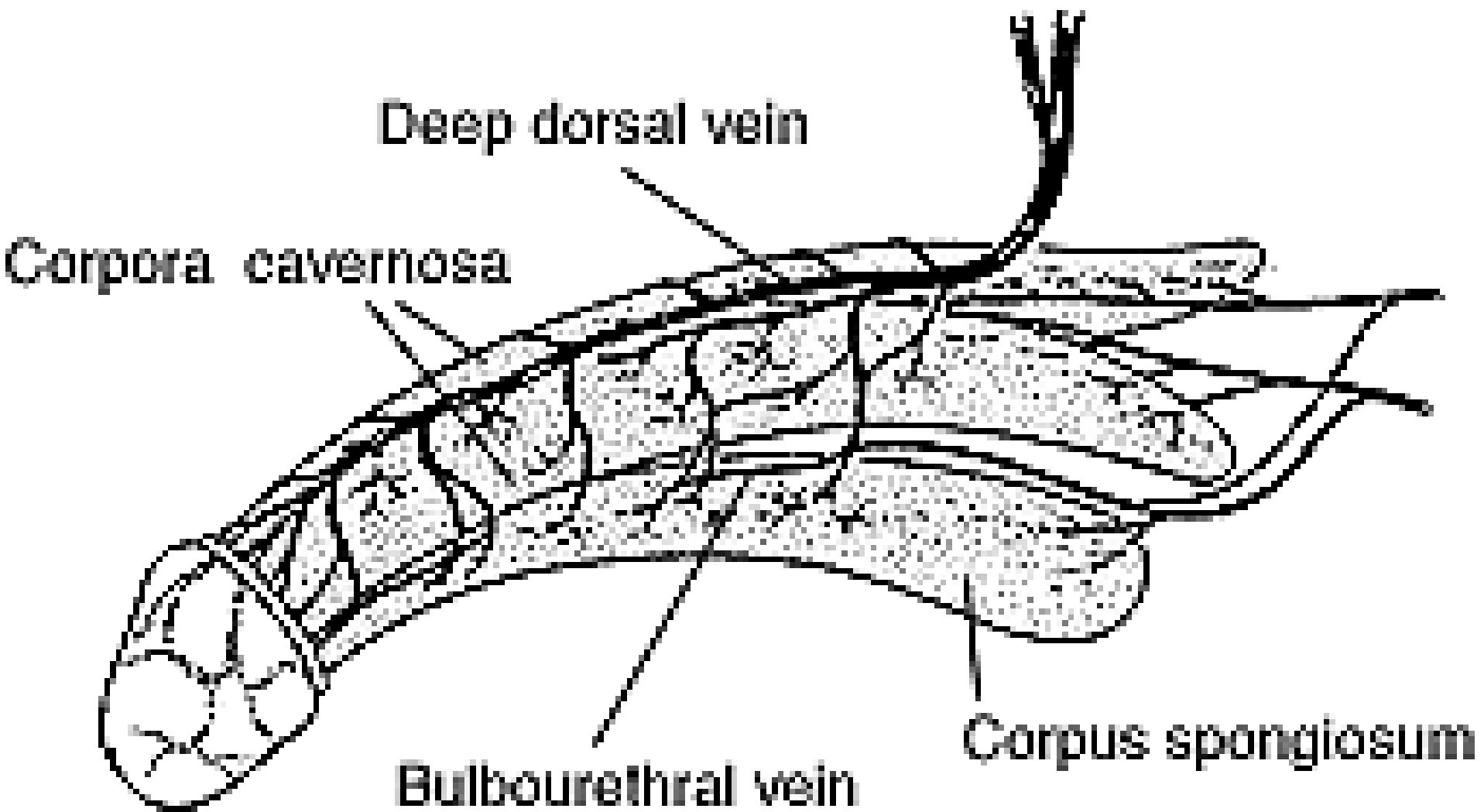


# The Venous System

- Superficial system
  - Intermediate system
  - Deep system
- 







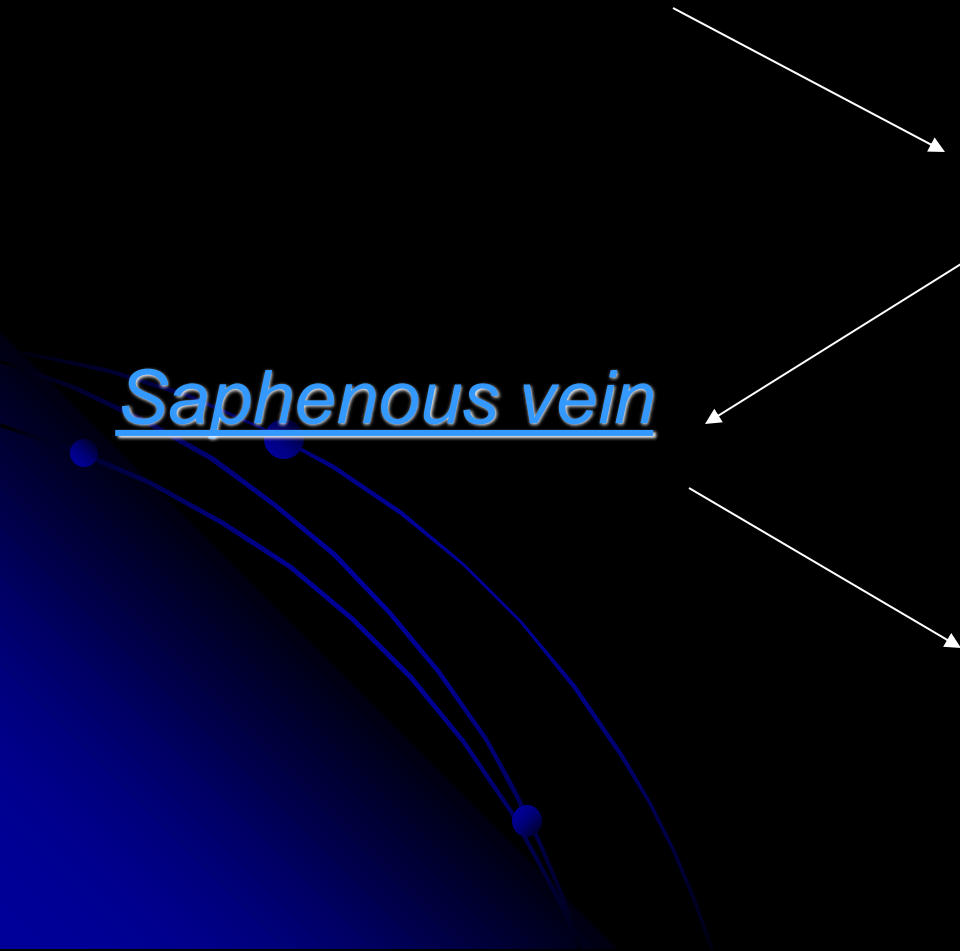
# Superficial venous system

Skin and Prepuce

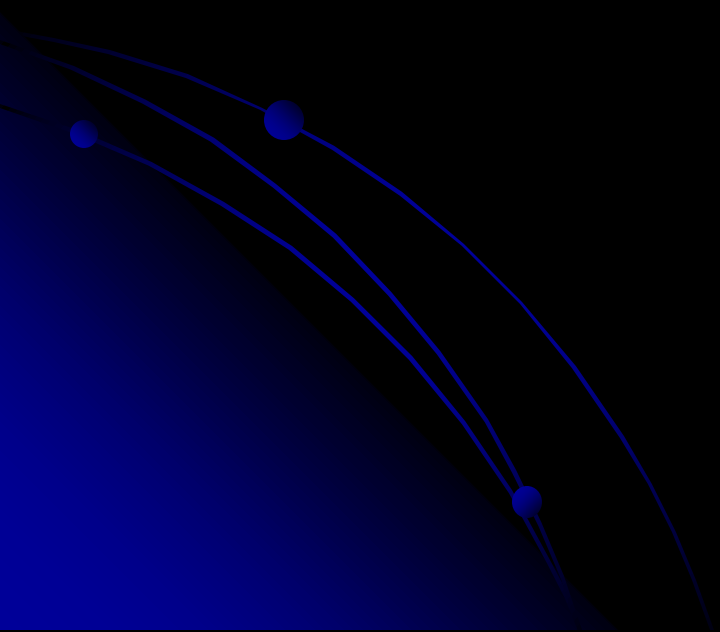
*Superficial Dorsal vein*

*Saphenous vein*

*External Pudendal vein*



# Intermediate Venous System



# Glans penis, Corpus spongiosum and the distal 2/3 of the Corpus Cavernosa

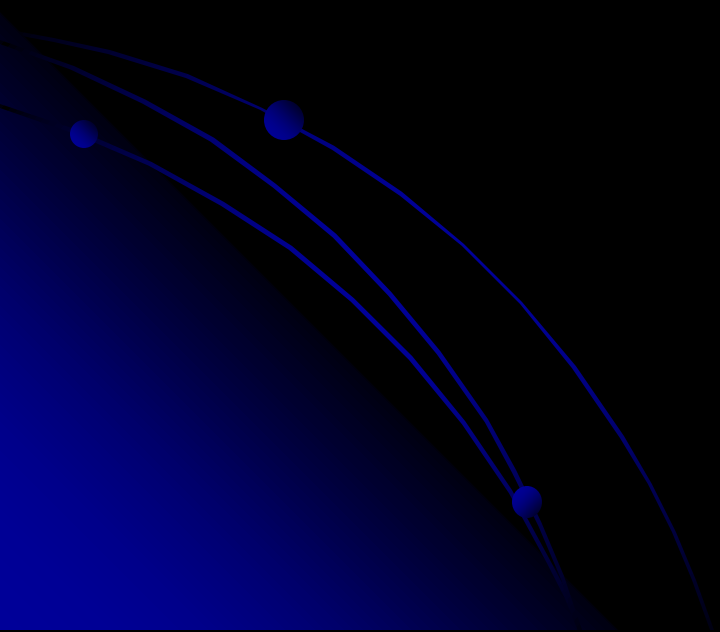
• Deep dorsal vein  
& circumflex veins

The diagram illustrates the venous drainage of the male genitalia. A line from the title points to the first bullet point. A horizontal arrow points from the first bullet point to the second. A diagonal arrow points from the second bullet point to the third. In the bottom left corner, there is a blue shaded area with several blue dots and curved lines, representing the internal iliac vein and its tributaries.

• Prostatic plexus

• Internal iliac vein.

# Deep venous system



Blood from the sinusoids  
and from the proximal 1/3  
of the penis

Cavernous vein

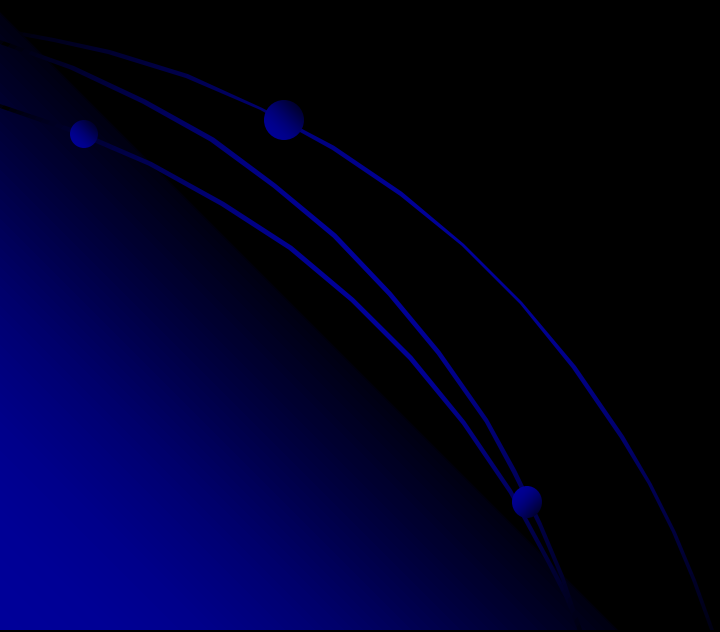
Crural vein & Bulbar vein



● Internal Pudendal  
vein

● Prostatic plexus.

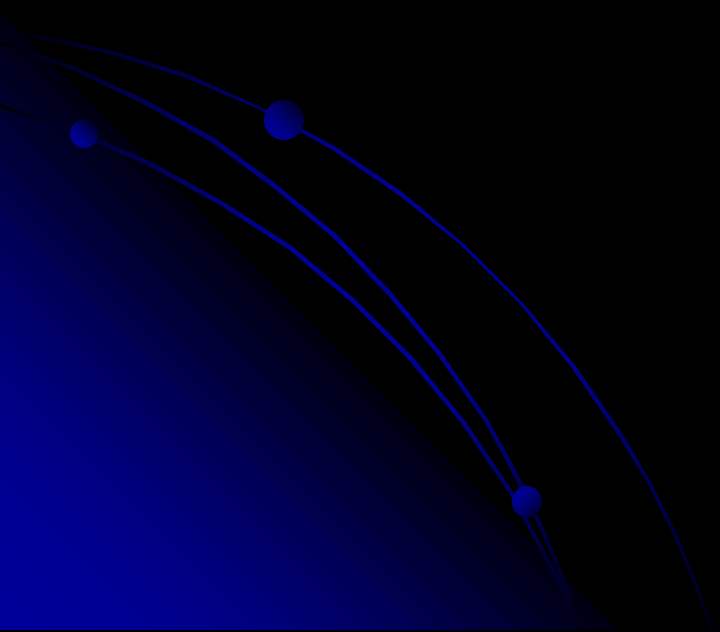
# The Lymphatic drainage of the penis



- Penile skin and prepuce → **Superficial Inguinal L.N..**
- Glans penis and penile urethra → **Deep inguinal L.N.** → **Presymphyseal L.N.**  
(occasionally to the **External Iliac L.N.**)



# The Nerve supply of the penis



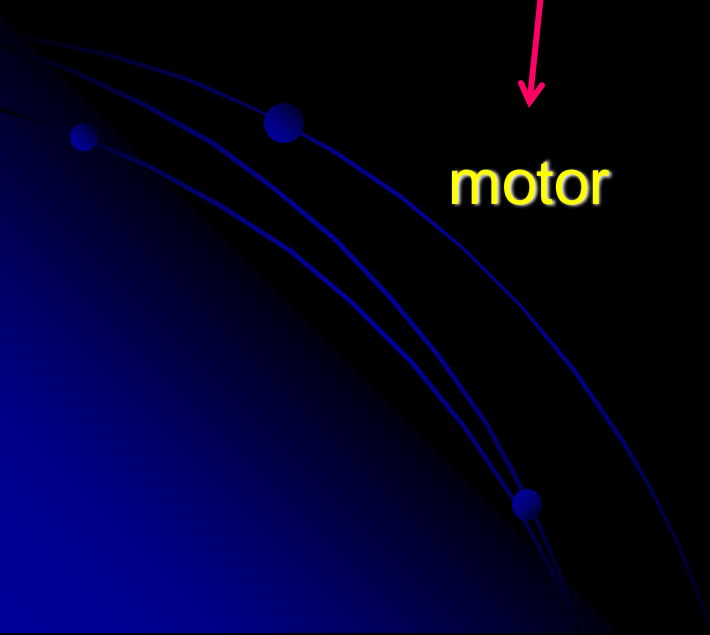
# Somatic supply

- The centre of the somatic nerves is in the segments s2-4 of the spinal cord.

- It gives :

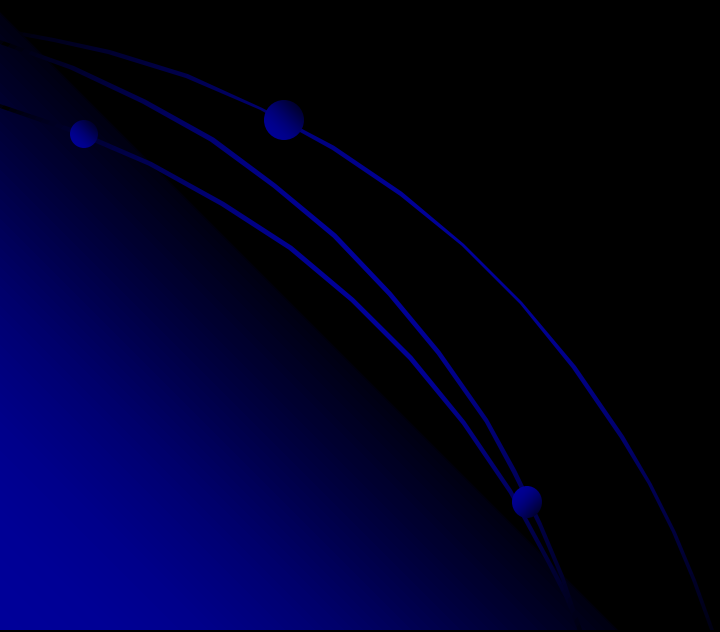
motor

sensory



## Motor branch

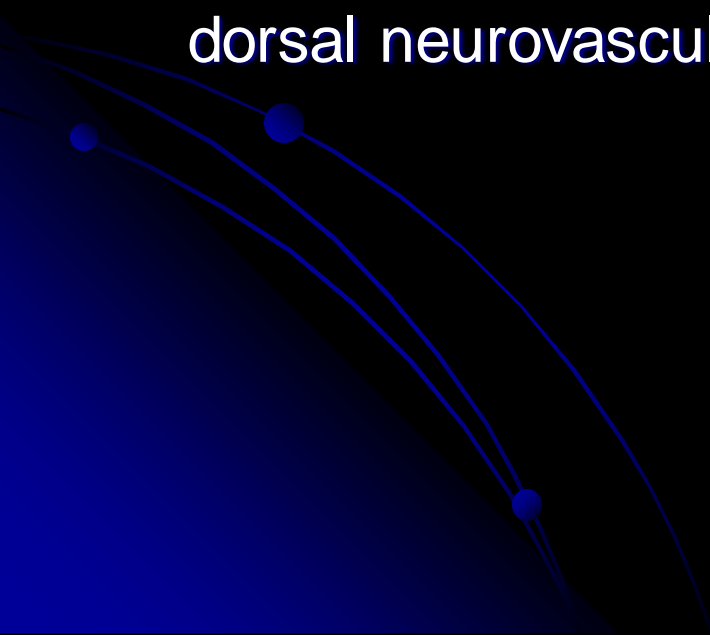
- This is motor to the Ischiocavernosus and Bulbospongiosus muscles.



# Sensory branch

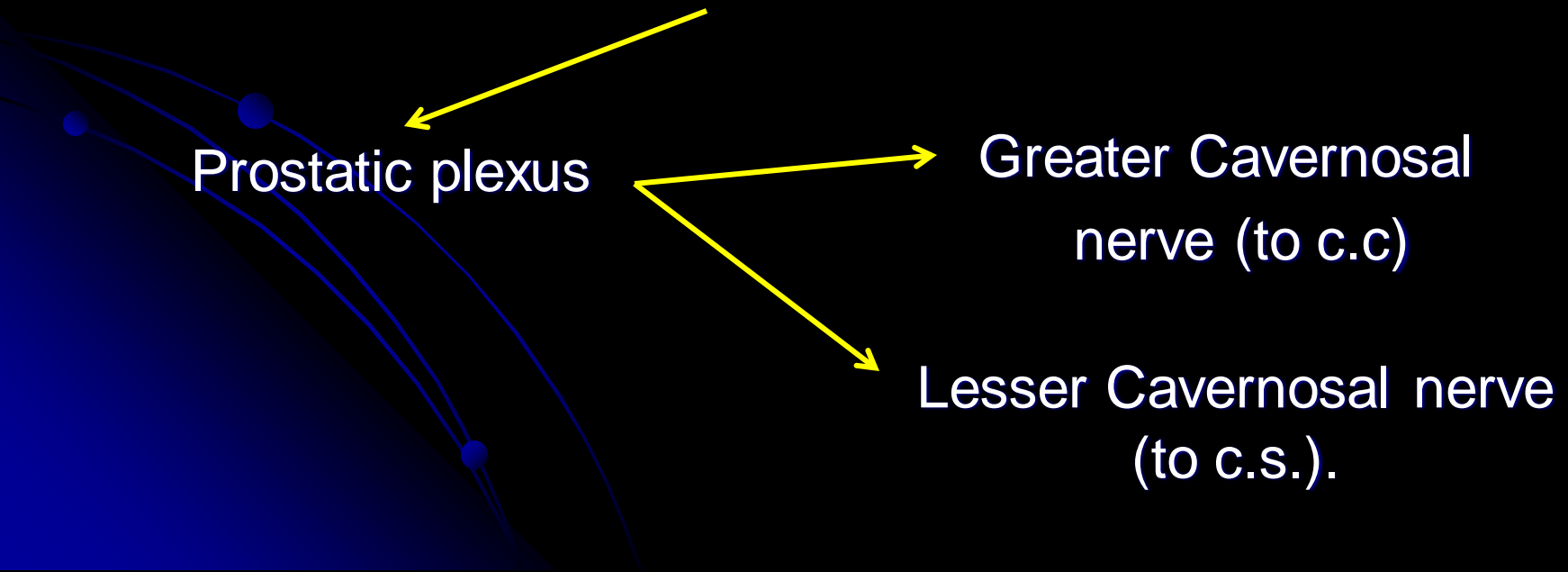
- Sensory to..

Penis ..through the **Dorsal nerve of the penis** (passes lateral to the artery and vein in the dorsal neurovascular bundle).



# Parasympathetic supply

- Centre in the s2-4 and gives the following branches:
- Pelvic nerve (nerve erigients)



# Sympathetic supply

- Centre in T11-L2.
- Superior Hypo gastric plexus

● Pelvic plexus

Prostatic plexus.

